The importance of first experiences in a new learning domain: an approach from the Integral Zone of Proximal Development

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Abstract

First experiences or initial contact with a new subject, skill, or learning domain are not merely a preliminary formality before "real" learning begins. They constitute a foundational moment that decisively conditions the learner's future disposition towards that domain. This article analyzes the importance of first experiences within the framework of the Integral Zone of Proximal Development (IZPD), which integrates four dimensions: Knowledge (initial knowledge), Power (foundational capacities), Will (motivation and emotions), and Belief (expectations and self-efficacy). It is argued that the first contact must be carefully designed as an integral scaffold that not only transmits information but also generates a positive disposition towards continuous learning. In contrast to the view that first experiences are irreversibly determinant, an intermediate position is proposed: first experiences establish entry trajectories (facilitating or hindering), but brain plasticity and subsequent educational intervention can modify these trajectories, albeit with greater effort. Examples are provided in handball, mathematics education, language learning, and vocational training, along with practical recommendations for designing effective first contacts.

Keywords: first experiences, initial contact, Integral Zone of Proximal Development, initial motivation, self-efficacy, scaffolding.

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1. Introduction

When a child or an adult faces a new learning domain for the first time—whether it be handball, mathematics, a foreign language, or operating a machine—that initial moment is rarely neutral. It is accompanied by emotions (curiosity, fear, excitement, anxiety), expectations ("this is difficult," "I'm sure I'll get it"), and first impressions that can last for years. Popular wisdom recognizes this: "first impressions are the most lasting." But what does the science of learning say about this phenomenon?

For decades, traditional educational approaches have treated the first contact as a purely informational phase: rules are explained, basic procedures are demonstrated, and the learner is left to "try it out." It is assumed that learning begins afterward, once the student already has a foundation. This conception ignores that the first contact is already learning, and of a particularly sensitive kind.

Neuroscience has shown that the brain is especially plastic when faced with novel experiences. Eagleman (2020) points out that "the first time we do something, the brain is on maximum alert, recording not only the content but also the emotional context." That initial recording acts as an anchor that will influence all subsequent experiences.

This article aims to analyze the importance of first experiences in making contact with a new learning domain using the framework of the Integral Zone of Proximal Development (IZPD) (Mascarell, 2025), which distinguishes four personal dimensions: Knowledge, Power, Will, and Belief. It is argued that the first contact must be designed as an integral scaffold that acts simultaneously on all four dimensions, especially on those that are often neglected: the Will (motivation) and the Belief (self-efficacy).

Unlike deterministic approaches that consider first experiences as irrevocable, it is proposed that these establish entry trajectories (facilitating or hindering) that can be modified later, but at a higher cost. Brain plasticity and educational intervention allow for "repairing" negative first contacts, but it is more efficient to prevent them.

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2. Theoretical Foundations: Initial Contact as a Foundational Moment

2.1. What Happens in the Brain During a First Contact?

During a first contact with a new domain, several neural networks are activated:

- **Attention and novelty system:** The ventral tegmental area releases dopamine, which signals "this is relevant, pay attention to it." The first experience is marked with special emphasis (Schultz, 2015).
- **Limbic and emotional system:** The amygdala evaluates whether the novelty is dangerous or safe. A negative initial experience (public failure, ridicule, pain) can generate a stress response that conditions future approaches.
- **Hippocampus and episodic memory:** The first episodes are stored as vivid memories that serve as references for interpreting subsequent

experiences. This is why we remember our first class of something better than the tenth.

These mechanisms are adaptive: they allow rapid learning of what is safe and what is not, what deserves effort and what does not. But they also mean that a poorly designed first contact can create barriers that are difficult to remove.

2.2. The IZPD Applied to First Contact

At the moment of initial contact, each learner is at a specific point across the four dimensions. The educator must (quickly) assess that initial situation:

Dimension	Typical State During First Contact	Risk if Neglected
Knowledge	The learner knows nothing or has prior ideas (sometimes erroneous).	If conceptual errors are not detected, they become consolidated.
Power	The learner has general capacities (attention, memory, motor skills) that may be sufficient or insufficient.	If the task demands more than they can handle, they become frustrated.
Will	The learner usually has initial curiosity, but also fear of failure.	If curiosity is not fed, it quickly fades.
Belief	The learner arrives with prior expectations (general self-efficacy, beliefs about the domain).	If their negative belief is confirmed ("this is for smart people"), they give up.

The goal of the first contact is to move each dimension as far as possible towards the positive side, not just to transmit content.

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3. The Paradox of First Experiences: Fragility and Opportunity

3.1. The Effect of Negative First Experiences

Numerous studies show that a negative first contact has disproportionate consequences:

- In physical education, children who experience a first experience of ridicule or failure in a sport tend to avoid it for years afterward (Siedentop, 2002).
- In mathematics, a first experience of frustration (a problem that cannot be solved, a teacher who corrects harshly) predicts negative attitudes even into adulthood (Boaler, 2016).
- In language learning, the first exposure to an incomprehensible accent or public correction can generate an "affective filter" that inhibits oral production for years (Krashen, 1982).

The underlying mechanism is classical conditioning: the learning domain becomes associated with a negative emotion (anxiety, shame) and is subsequently avoided. The Will dimension becomes negative ("I don't want to experience that again") and the Belief dimension becomes contaminated ("I'm not good at this").

3.2. The Power of Positive First Experiences

Conversely, a well-designed first contact generates a virtuous circle:

- The learner experiences adapted success (they achieve something real, even if small).
- Self-efficacy increases ("I can do it").
- Curiosity is maintained or increased ("what else could I do?").
- The learner attributes success to their effort or strategy, not to luck.
- They feel competent and autonomous, which fuels intrinsic motivation (Ryan & Deci, 2017).

A single positive experience does not guarantee long-term learning, but it opens the door. The learner is willing to invest effort, tolerate temporary frustration, and seek help when needed.

3.3. The Window of Opportunity of First Contact

First contact is especially influential because the learner does not yet have a solid belief system about that domain. It is like a blank slate. With each subsequent experience, beliefs consolidate. This means that the margin for change is greatest at the beginning. After many mixed experiences, changing the learner's disposition requires much more intensive interventions (such as cognitive restructuring or exposure therapy).

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4. Principles for Designing Effective First Experiences from the IZPD

Based on the above foundations, the following principles are proposed for designing the initial contact with any new learning domain.

4.1. Principle of Guaranteed Success in the First Action

The learner must experience real success in the first or second interaction with the domain. This is not about artificial success (lying about the result), but about adjusting the task so that it is within reach.

- **Example in handball:** Instead of starting by teaching the jump shot from 9 meters, start by throwing at a giant goal from 3 meters, without a goalkeeper.
- **Example in mathematics:** The first problem is not complex equations, but a number riddle that almost everyone can solve.
- **Example in languages:** The first word or phrase taught is one that the student needs for an immediate real interaction (e.g., asking for water or greeting someone).

4.2. Principle of Integral Scaffolding in the Four Dimensions

The educator must anticipate needs in each dimension:

Dimension	Specific Scaffolding During First Contact
Knowledge	Provide only the minimum information necessary for the first successful action. Avoid overloading with rules and exceptions.
Power	Reduce task difficulty (space, time, number of elements). Allow technical aids (scripts, templates, examples).
Will	Connect the domain with the learner's personal interests. Use gamification, narrative, meaningful examples. Reinforce effort, not just the result.
Belief	Verbalize attribution to effort or strategy ("you achieved this because you followed the steps"). Show models of similar people who succeeded. Avoid comparisons with others.

4.3. Principle of Protection Against Negative Public Exposure

The first experience must take place in an environment of psychological safety. Errors should not be ridiculed or even pointed out publicly if they could generate shame.

- **Example in handball:** The first practices are done in small groups, without bleachers, without an audience. Errors are corrected in private.
- **Example in the classroom:** Use anonymous writing or response cards so that no one fears "looking bad" in front of classmates.
- **Example in vocational training:** The first simulations are done with a trusted colleague, not with the supervisor present.

4.4. Principle of Positive Emotional Closure

The first session must end with explicit positive reinforcement and a perspective for the future. The learner should leave with the feeling of "I want to come back."

- **Useful phrases:** "You've done something you've never done before," "Look what you've achieved today," "Next time we'll do something even more interesting."
- **Avoid:** "Well, it wasn't bad for a first time" (weak reinforcement), "You have to practice a lot" (pressure), "We'll see if you do as well next time" (negative expectation).

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5. Examples Applied to Different Domains

5.1. Handball (Under-9s, 8-9 years old)

First session (initial contact):

Dimension	Activity or Scaffolding
Knowledge	Only explain: "You have to put the ball in the other team's goal, without taking more than three steps and entering the area."
Power	Play 4x4 in a reduced space (15x15 m minibasket court) with reduced goals and with a goalkeeper. The ball is soft.
Will	Tell a story: "We are superheroes who have to rescue the ball and take it to the base."

Dimension	Activity or Scaffolding
Belief	Every time someone shoots (even if it is saved by an opponent), it is celebrated. At the end, each person says one thing they did well.

Expected outcome: All children experience at least one successful shot (the ball enters the goal). They leave happy and want to come back.

5.2. Mathematics (First Fractions Class, 10-11 years old)

First experience (initial contact):

Dimension	Activity or Scaffolding
Knowledge	Do not give the formal definition of a fraction. Start from a situation: "fairly sharing a cake among several friends."
Power	Use paper circles that can be folded and cut. The task is "cut so that everyone gets the same amount."
Will	Present it as a challenge: "Can you figure out how many different ways there are to cut the cake into equal parts?"
Belief	Verbalize: "Wow, you've discovered that one half is the same as two quarters without anyone telling you."

Expected outcome: Students feel like discoverers, not passive receivers. They associate fractions with fair sharing, not abstract rules.

5.3. Foreign Language Learning (First Day, Adults)

First experience (initial contact):

Dimension	Activity or Scaffolding
Knowledge	Only teach three very useful phrases: "Hello," "Thank you," "How do you say...?"
Power	Practice in pairs, with written support cards. Perfect pronunciation is not required.

Dimension	Activity or Scaffolding
Will	Connect with a personal goal: everyone writes down what they want to use the language for (travel, work, family).
Belief	Show a video of a former student who started from scratch and now holds conversations.

Expected outcome: Adults lose their fear of "sounding ridiculous." They experience that with very little, they can already communicate something.

5.4. Vocational Training (Using New Software)

First experience (initial contact):

Dimension	Activity or Scaffolding
Knowledge	Do not give the manual. Set a simple task: "Write your name and save it."
Power	Provide a cheat sheet with the exact three steps. Allow asking a colleague.
Will	Link to an immediate benefit: "This will save you 10 minutes a day."
Belief	The trainer says: "Everyone here is perfectly capable. I also learned with this same task."

Expected outcome: The worker does not feel overwhelmed by the software's complexity. They trust that they can master it with practice.

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6. Discussion: Are Negative First Experiences Reversible?

A crucial question is whether a poorly designed first experience can be "repaired" afterwards. The evidence suggests yes, but not without cost.

- **Positive example:** Many elite athletes had discouraging first contacts (they were rejected in trials, lost their first matches badly), but later found

a coach or an environment that rekindled their motivation. However, these cases are the exception, not the rule.

- **Repair mechanism:** To change a negative first impression, an intensive and sustained intervention is needed that generates multiple positive experiences to counteract the initial one. Sometimes even a change of context (another teacher, another group, another methodology) is required.
- **Opportunity cost:** While repairing a negative first experience, the learner could have been progressing if the first experience had been positive.

Therefore, the recommendation is: invest in designing good first experiences, because it is much more efficient than repairing them later. This does not mean that a bad first contact is irreversible, but that the educator who receives the learner afterwards will have to dedicate extra time and effort to rebuild confidence and motivation.

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7. Conclusions

1. First experiences or initial contact with a new learning domain are foundational moments that exert a disproportionate influence on the learner's future disposition, due to early brain plasticity and the formation of vivid episodic memories.
2. The Integral Zone of Proximal Development (IZPD) provides a useful framework for analyzing and designing first contacts, by considering not only what the learner knows or can do, but also what they want and believe.
3. An effective first contact must guarantee: (a) guaranteed success in the first action; (b) scaffolding in the four dimensions; (c) protection against negative public exposure; and (d) positive emotional closure.
4. Negative first experiences are not absolutely irreversible, but they require intensive and sustained interventions to repair them, at a greater cost than preventing them.
5. Practical examples are offered in handball, mathematics, languages, and vocational training that illustrate the application of these principles.

The most important implication for educators, coaches, and trainers is: do not underestimate the first session. Plan it with as much care as the high-performance sessions. Because what happens in that first encounter will condition everything that follows.

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